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BY

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INDUSTRIAL EDUCATION IN EUROPE.

I am painfully conscious of the limitations of this paper in comparison with the comprehensiveness of the title under which it has been announced, and I may be allowed to explain in advance, that it is not intended so much as an exhaustive account of what is being done for Industrial Education in Europe, as my subject may be thought to imply, as an inquiry into the methods of a few European schools, and the systems of which the schools are after all only a part, whose example seems most likely to prove interesting and profitable to the promoters of similar movements in America.

And I hope that the prominence which I have given to the work of the Industrial Art Schools in this discussion of industrial education, will not require any extended explanation or apology. It is, or it ought to be, very generally acknowledged, that art education, properly understood and applied, is the fiery soul of this whole burning question of industrial education, and the influences which will be found most potent in its solution are, I believe, best studied where they are focussed most strongly.

Let us recognize the significance of the expression by which we designate and dignify all industrial pursuits, when we speak of them as the arts. Let us remember that art is, after all, the informing spirit of all industrial endeavor; the creative impulse which finds expression of some sort, and in some degree, in all the crafts by which men minister to each other's comfort and enjoyment, and that industrial improvement, whether by educational or other methods, means mainly the quickening and developing of this power.

Only it must, to be fruitful, be directed into industrial ways. The application of art to industry must be made in the school itself, or it will in the vast majority of cases be made, if at all, by roundabout and wasteful ways.

And if any apology is needed for the mention I have made of the work of the institution with which I happen to be connected, and the comparison which has sometimes been instituted between it and that of the schools which I have undertaken to describe, it is simply this: the examination of the European schools was undertaken mainly with reference to just such a comparison, and it seems to me that this is the best possible way to make the lessons, which such examinations ought to teach, definite and fruitful. It is easy to generalize, and to enlarge on the advantages of the things which are far off, and we do this with perfect confidence as long as our descriptions are kept vague and indefinite. But what we want, as it seems to me, is to take the lessons home, to examine the methods of others in the light of our own experience, and to try them by the standards which we ourselves find serviceable and authoritative.

The inquiries with which this paper is mainly concerned then, relate to the European schools, which seem to me to stand for most as indicating the path which practical industrial and art education should, or should not, follow, to be successful in America.

It is easy, no doubt, to overestimate the importance as guides of even the best of the European schools. To a considerable extent, the conditions here are different from those with which the European educator has to deal, and to this extent we must work out the problem for ourselves.

A very superficial knowledge of European affairs is enough to convince one of this difference, and to impress upon him the necessity of another point of view from which to regard the questions involved.

One cannot, for example, speak of "classes," industrial or other, or count upon their manageableness in any effort to improve their condition, with anything like the confidence that is possible over there. The least spirited American resents all such attempts at classification, and balks like a mule at any treatment which shows evidence of being based upon it, and per-

haps the only opposition worth considering which industrial education has encountered among us, has sprung from recognition of this feeling as one of the most stubborn, because most fundamental peculiarities of the national character.

It is an embarrassing thing undoubtedly, that our children and their parents too, decline to have their careers mapped out for them, and their places assigned them with such definiteness at a period sufficiently early to afford an opportunity for that thoroughness in preparation for them, which every body knows is painfully lacking, not only in the industries, but in the so-called "professions" as well. But it cannot be denied that such is the case, and it must not be ignored. Besides, who knows but certain decided advantages may, in the end, result from the changed methods of regarding the matter which is thus made necessary.

I fancy I see one improvement already. Industrial occupations and processes are claiming recognition in school and college courses, not for the sake of the encouragement and assistance they may render to the industrial classes, but because familiarity with them is felt to be indispensable to a really liberal education; a wonderful change certainly, and one which, to my mind, presages the complete and speedy removal of whatever disadvantage has heretofore attached to industrial occupations, on grounds of dignity and the niceties of the social scale. When young America is trained for mechanical pursuits under the same roof, and amid the same surroundings as he is trained for preaching and pleading; when he is made to feel at school that the same distinction is to be earned by skilful doing as by skilful dosing, the necessity for all this more or less sincere, but very wordy, extolling of the dignity of labor which employs so much of our energy at present, will be removed. And when he acquires industrial skill, not at the expense of his mental training, but along with it, and *as a necessary part of it*, the crafts themselves will assume the old dignity and importance which once they had, but which they have lost in these days of false and foolish artificial standards by which men measure each other. All this we fondly believe, I think with reason, we are working out in America better than anywhere else; work-

ing it out indeed in a way that is not possible anywhere else. Meantime it is the part of wisdom, as of modesty, to learn of those who, under whatever conditions, have tried to do very much the same thing that we are busy with; have in several respects the advantage of us, and have accomplished much that we have only projected.

The European Schools whose example is most likely to be serviceable to us are, first, certain English schools, of which the Bradford Technical College is, perhaps, the best example; the Industrial Art Schools, of Munich, Nuremburg, Vienna, and Geneva; the Textile Schools, of Leeds, Amiens, Crefeld. Reichenburg, Lyons, and several other cities—that at Crefeld being everywhere recognized as the best, however; and the National Schools of Decorative Art at Paris, Brussels, Berlin, and that at South Kensington in London. Of these, I visited, this last summer, the schools at London, Bradford, Leeds, Crefeld, Munich, Geneva, and Amiens, and have collected such information regarding each of the others as will enable us to judge pretty accurately concerning them.

The schools at Paris, Brussels, Berlin, and London, are art schools pure and simple, or rather are art schools in which such other, but still very general, instruction is given as is needed by artists, architects, designers, and industrial art workers in general, but with very little, if any, actual industrial work in the schools themselves.

THE SCHOOL AT SOUTH KENSINGTON.

Let us begin with the National Art Training School, South Kensington, London, which though really an art school with, as we shall see, its industrial purpose rather vaguely defined, yet stands for so much in the English system, and is so generally regarded as the very fountain head of industrial training, and the connection between it and the most minute ramifications of the system into the most remote corners of the kingdom, is so

direct, that it clearly deserves the first place in any examination into English methods of promoting industrial education.

Its claims to recognition and support have always been based on industrial considerations, and the extension of its methods to every nook and corner of England has been advocated, and is to-day encouraged, purely and simply on this ground.

In its magnitude and importance the South Kensington School is in itself to be compared, not with the "National School of Decorative Arts" in Paris, to which I have referred above, but with the "National and Special School of Fine Arts," into an examination of whose magnificent work it is no part of the purpose of this paper to enter.

This last is easily the first school in the world, not only for painting and sculpture, but for the higher forms of decorative art as well, and it can hardly be worth while to attempt a comparison of its methods with those of the English schools. I can hardly keep myself from saying, however, that important as the work of the English school has undoubtedly been in England, and well as the methods in vogue in it seems to suit the temper of the English people, there is very little about it, except, of course, its central purpose, which deserves any special commendation, or to be followed as a model.

The South Kensington School is to be regarded as the centre of a system of schools scattered throughout the United Kingdom, established and maintained in various ways and by different influences, municipal, corporate, and personal, but all receiving Government support in proportion to their success in disseminating the methods and attaining the standards set by the central school. This success is largely measured, and the amount of Government support determined, by periodical examinations held simultaneously all over the kingdom; the papers being all promptly sealed and sent to London for examination. Any school, private or public, whose instructors are properly certificated, and which is itself properly registered in London, may apply for these papers, in any desired quantity. The papers are

all systematically graded from those covering the most elementary work, such as a bit of ornament in outline from a printed copy, up to the most advanced, and each piece has its price, from a shilling or two up to several pounds. Whatever merit can possibly attach to the introduction of a uniform system all over the country, belongs, of course, to this scheme, but unfortunately the most obvious result is to encourage the most commonplace work by setting this stamp of government approval on the most mediocre performances. For of course the teacher to whom the money is paid and whose compensation it constitutes, at least in part, has his labors narrowed at once to qualifying as many pupils as possible to pass the examination, knowing as he does perfectly well, after a very little experience, about what is to be expected on each paper. The pupils have, then, to be persistently coached for these examinations, and stimulated by means of another system of prizes, which is provided for them. The whole system is thus one machine for earning and dispensing money by doing and by getting done a great deal of otherwise uninteresting and, to a considerable extent, unprofitable work.

It is hard to say how much the admittedly inartistic character of the work of these school depends upon the mechanical methods of administering them, which are perhaps unavoidable considering their extent and the principle which underlies their organization, and how much on the *personnel* of the Department of Science and Art by which they are controlled. Probably it is partly the fault of both, and I believe the changes made in the recent past have all been in the direction of improvement, not only by allowing greater freedom in the methods of instruction adopted in the different schools, but by appointing to high places men of more liberal culture and broader views. The "System" is, however, a pernicious one still, and certainly contains few features which deserve to be transplanted here.

Briefly and bluntedly stated, its great fault is that it constantly encourages, by setting a premium on, the most commonplace and plodding performance. In order to win the prizes the students must strive not so much to learn how to draw, as to produce a few highly finished drawings. On these they are

encouraged, or at least allowed, to spend an amount of time wholly disproportioned to their importance as studies, and in learning to regard them as results instead of evidences of real progress, come to "baby" them and to niggle over them in a manner that is fatal to all real attainment.

And if the work of these schools is not very imposing, from the artists' point of view, which it certainly is not, judging from the prize works exhibited in London this year from the principal schools throughout the kingdom, its influence in industry is, on the other hand, far too indirect and indefinite to be satisfactory either.

It is perhaps a part of the *laissez faire* doctrine to feel that the application to industrial pursuits of all this art education—for whatever its quality, there is certainly a good deal of it—may safely enough be left to take care of itself. Certainly very little has been done in the English schools—nothing, I think, in the central one at South Kensington—toward making any such application in the schools themselves.

Plenty of things are designed in them, but nothing made; there is plenty of constructive drawing, but no construction; some modelling, but no founding or carving; in short, nothing, or next to nothing, is produced by industrial processes that shows the application of all this training in art; nothing that demonstrates its practical helpfulness and emphasizes its importance; nothing to set the standard in any particular industry of what first-rate, that is artistic, work ought to be; nothing, and this is perhaps the most serious thing after all, to direct the student's energies into industrial channels by familiarizing him with the processes on which actual production depends, and by giving him a taste of the pleasure which comes from a sense of something really accomplished, as distinguished from that which is only thought about and more or less definitely prefigured in a design. I am sure that the great need of England, as of America, is not so much schools of design, as schools of artistic *production*, which shall train their pupils in the way of doing something well.

Until this feature is more fully developed than it is at present, I am afraid the English schools will continue to deserve

the reproach which certainly clings to them now, that instead of making industry artistic they are mainly engaged in turning out an indefinite number of poor artists of whom, as everybody knows, there are always, and everywhere, too many already.

As this seems to me the greatest danger that threatens American schools too, I am the more earnest in my plea for some other model for them than the London school, and the system of which it is the centre.

The French National System includes not only the Schools of Art, but special Trade Schools, such as the Gobelins Manufacture of tapestry, that for workers in Mosaic, those for jeweller's work, for furniture making and I don't know how many others besides. A great deal of attention is necessarily paid to Art education, pure and simple it is true, but its application to industrial work is the soul of the whole undertaking. Then the manual training feature is being very generally introduced into public schools of France, where the study of drawing has long been given a very prominent place. So that the application of Art to industry can hardly be said to be left to take care of itself in anything like the sense in which this is to be said of the English schools. In Germany, also, the schools which I find most admirable are those in which the industrial application is the most direct and complete. Of these the Munich school is probably the best, and I have accordingly devoted a considerable portion of this paper to a discussion of its methods and merits.

THE ENGLISH TECHNICAL COLLEGES AT LEEDS AND BRADFORD.

The Technical Colleges at Leeds and Bradford, and I believe the one in London also, although I did not visit this last—are doing a work which seems to me to promise relatively better results than the art schools just described, or rather they supplement the instruction of the art schools very effectively with practical work, for the art work proper which is done in them is on the same plane as that of the system already noticed, part of which, indeed, it is. They are, as their name implies,

directly concerned with the *technique* of the industries of which these cities are important centres, and not merely solicitious about teaching the theory of them and about producing designs made with more or less likelihood—usually less—of ever being carried out.

Both these cities, Leeds and Bradford, are important centres of the Textile Industry, and both these colleges have departments of Textile Design in which the *technique* of weaving, as of dyeing and other related branches, is taught and practised.

At the Bradford school there are also well furnished machine shops in which the pupils execute a good deal of really important work, orders for engines and machinery being received as at any other establishment, and a sufficient number of competent workmen regularly employed to ensure careful and accurate work, and to prevent waste. So that everything produced has not only a market value but is really exemplary work of its kind.

How far it is desirable to give the product of the school-shops commercial value, and to manage the school with reference to this purpose, is still a question which educators regard as debatable. I believe, however, that the tendency at present is in the direction of accepting, as far as possible, the principle that it is desirable to give intrinsic value to everything in which the pupil exercises his skill. In other words, that no material shall be *deliberately* wasted.

If this implies something of a sacrifice regarded from the purely educational standpoint; if the teacher is, in this case, less free to order his exercises in such a way as to give the pupil an opportunity to investigate and apply the greatest number of principles and employ the greatest number of faculties, the work so conducted, does on the other hand, certainly gain in seriousness, and the moral gain, which comes from impressing the pupil with a feeling of accountability for everything that is put into his hands, must be considerable.

At the Bradford school I was assured that all the products of the looms, as well as of the workshops, was sold.

It must be owned however, that the work of these schools was more satisfactory on mechanical, than on artistic grounds.

As far as imparting a knowledge of industrial processes is concerned, they seemed to me, especially that at Bradford, very well equipped and efficient institutions ; on the side of applied art, and the cultivation in industry of the artistic spirit they still leave a good deal to be desired.

One thing is to be remembered about these schools as influencing to a considerable extent the character of their work. They are intended for, and are largely attended by adult workmen and apprentices, who attend either in the evening alone or for a portion of the day ; attending in many cases only a few hours a week, and the efforts of the schools are, very properly, largely directed to giving them the utmost amount of directly helpful information possible, and precludes any very ambitious aims with reference to advancing the standards which are respected in the industries themselves.

THE INDUSTRIAL SCHOOL AT AMIENS.

Very much the same is to be said regarding the Industrial School at Amiens as was said of the English schools just noticed. It is not an industrial art school in any sense, being mainly devoted to the practical part of the textile industry, the mechanical and scientific branches of which, including chemistry and dyeing, seem to be well taught, but the school is entirely without provision for instruction in design, there is not even a class in free-hand drawing.

To find an institution which aims, as does our own school here in Philadelphia, to not only render such service as is possible to adult workmen and apprentices by means of evening class and short day sessions—in hours snatched from the work shop or factory—but also to train young men in the most thorough manner to a scientific knowledge of this industry, and to associate this training with so much of the work of our Art School as shall enable them to do original and artistic work as designers, we must go to the government schools of Austria and Germany, that at Crefeld in Prussia being usually regarded as the model school of the kind in Europe.

THE ROYAL SCHOOL OF WEAVING AND DYEING AT CREFELD.

This school seems to leave little to be desired as far as its building equipment and the mechanical part of its instruction is concerned, but it labors under a serious disadvantage in being located in an unimportant and extremely provincial town, which notwithstanding the fact that it is the centre of the silk industry in that part of Prussia, has yet comparatively little direct interest in the school, sends it almost no pupils, and seems to reflect in its own industrial life very little of its influence.

The reputation of the school is, however, so great, and its appointments so admirable, as to attract a considerable number of students from widely different and far distant localities, (I found several pupils there from America,) and in certain ways notably as a kind of a mechanical institute for the textile industry, the stamp of its approval being eagerly sought and highly prized by inventors, it undoubtedly accomplishes a good deal of valuable work.

It provides a regular two years' course which is, however, virtually followed by nobody except the free scholars which it is obliged to receive from the city of Crefeld. For the rest its courses are almost entirely elective. Pupils devoting themselves sometimes for three or four years to such special branches of the industry as they desire to become familiar with.

Entrance examinations are supposed to be held, but these are a dead letter as far as "pay" scholars are concerned, the school seems, nevertheless, to attract an extremely good class of fairly well prepared students.

There is a textile museum in the school building, which contains a very good working collection of fabrics, not larger or completer, perhaps, than our own collection at Memorial Hall, but more available, because under the same roof with the working class rooms and readily accessible at all times.

The work in design proper is antiquated and poor. I found students copying lithographs of impossible bouquets, such as no school in America, unless it were the veriest outpost among young ladies' seminaries, would think of offering to entertain its pupils with. Of studies from nature, original conventionaliza-

tion as well as systematic effort to apply geometrical principles, I could not find that there was anything at all.

I have no hesitancy in saying, that without any such magnificent plant as the faculty at Crefeld have at their disposal, it seems to me that we are doing more for our pupils here in the Philadelphia school. Not only is the association with artistic effort much more direct and effective here, but more opportunity is given the student to make the application varied and complete.

At Crefeld the looms are kept running, but with no very great variety of product, and the pupils have the opportunity of assisting at their operation as any other juniors or apprentices might do, but except in rare instances, as when one's design is selected at the end of a term from those produced by a whole class, the practical work at the loom has no relation to his own design.

In our school, on the other hand, the pupil has continually to carry his individual design to completion, performing or assisting at every stage of the work from the preliminary sketch to the dyed and finished fabric. Whatever it represents of taste, of knowledge or of skill; of calculations commercial, as well as possessing technical significance, all must be his own. I think there can be little question as to which is most likely to make him not only tasteful as a designer, but self-reliant and skilled as a director of other energies than his own.

THE NATIONAL SCHOOL OF DECORATIVE ART AT PARIS.

This is probably the best of the art schools, with a distinctly industrial purpose, in Europe. It is without the departments of applied art, the actual industrial work which makes the schools of Munich and Geneva so interesting, but in its union of industrial aims with art study of a serious character, and the thorough and sensible way in which instruction in science is insisted on as a necessary supplement to the training in art, it deserves to rank as a model school. It is admirably equipped, and has a numerous and excellent *corps* of instructors.

As is the rule in France the school is liberally provided for by government, and all instruction is free.

The example of France in this connection, her magnificent attitude toward popular education, the highest, as well as the most elementary, easily shames all the world. I think that knowledge can hardly be said to be free anywhere else, unless it is in Switzerland. One finds interest, even zeal, in and for certain classes, and splendid attainment too, in other countries, but it is only France after all who flings wide the doors and proclaims openly and unflinchingly that all things are for all men.

Four professors of drawing, two of sculpture, (one for ornament exclusively,) a professor, an assistant professor, and two tutors of mathematics, a professor of architecture, one of the history and composition of ornament, and one of applied design, compose the faculty.

Students begin to draw directly from the model and the cast without any of the nonsense of imaginary "preparation," by working from printed copies, which still clings to and degrades the work of the English schools, and includes the study of plants and flowers from nature and the living model, and exercises in original design.

Scholarships and prizes are dispensed with considerable liberality, but according to the admirable system which attains in French schools generally of periodical competitions or *concours*. These are held monthly throughout the year, and more important ones are held at the end of each year. There is, besides, the *grand concours* in painting and sculpture which is held once a year. Even to enter the principal competitions is something of an honor, and pupils are not admitted except after pretty thorough preparation.

The conditions under which pupils work at these competitions are calculated to promote habits of the greatest readiness and self-reliance. All work must be executed within a given time, which is quite short, and on themes which cannot be known beforehand, and in the more important competitions each student must be locked in a little room by himself so that there can be no possibility of deriving assistance from his fellows.

It is interesting to note that with the exception of architectural work of considerable importance, it is only the work done in these competitions that is publicly exhibited at the end of the year. Purses or stipends varying in amount from 360 francs to 600 francs are awarded and dispensed in monthly payments to pupils who distinguish themselves in pursuing full courses in science and art which must be followed simultaneously.

THE SCHOOL OF DECORATIVE ART AT BRUSSELS.

The school at Brussels hardly calls for a separate description. Its organization is virtually the same as those of the Parisian institution except that it is merged with the Academy of Fine Arts, the same building and equipment, and to a certain extent the same instruction, serving for both.

While these two schools in France and Belgium can hardly be said to have any such organic connection with the school systems of these countries, as either the South Kensington School or the School of Industrial Art at Munich—which serves also as a training school for teachers,—they are yet typical in the fullest sense of influences and of methods which are quite general, and are only the best examples of schools which exist in considerable numbers in both these countries.

THE INDUSTRIAL ART SCHOOLS OF BERLIN AND VIENNA.

I cannot speak with much confidence concerning the Industrial Art Schools of Berlin and Vienna, as I was not able to visit either, and detailed information regarding them has not fallen in my way to the same extent that has been the case with the others enumerated here. The Berlin school is, however, to be classed with those already described as art schools with an industrial purpose, but with little or no actual association with industrial processes, while that at Vienna is, I learn, quite the model school of Europe in the other direction. Both schools are associated as ours in Philadelphia is with museums of Industrial Art, and are doing substantially the same work as we are trying to do here.

Of all the schools which I saw, that at Munich impressed me most, and I have drawn perhaps the greater part of my lessons from, and made most of my comparisons with, the work of this school.

THE ROYAL SCHOOL FOR ART INDUSTRY, MUNICH.

This school, the model school in Bavaria, if not in all Germany, although managed by the Government now, was founded by the Munich Society of Industrial Arts. A society formed, very much as similar societies in several American cities have been, by persons whose motives were partly interest in Art and Art Education ; partly public spirit manifesting itself in a desire to benefit local industries and partly pure philanthropy. A prominent part of the mission of the institution has always been the assistance it has given to needy persons in all ranks of life—especially, so I was informed, of that class about which we knew so little in America, impecunious nobility—by providing a salesroom where the products of their industry could be displayed under the most favorable conditions. The Society was organized in the summer of 1850, and a permanent exposition and salesroom was established. A certain amount of assistance in the shape of money and the free use of rooms, being furnished by the government at the outset. The society also undertook the preparation and publication of drawing copies ; the publication of a journal, and the formation of a library as well as the holding of weekly meetings at which there would be lectures and discussions on subjects related to Art and Art Industry. In 1885 the society opened the school with seven pupils. The instruction was limited at first to drawing, modelling, and carving ; but with the growth of the school and the increased interest which was felt in it by those most competent to judge of the importance of the work it was doing, the courses have been extended so as to include such special and technical instruction as qualifies graduates for the professions of decorative painters, architectural modellers, designers for textiles, glass stainers, wood engravers, etchers, lithographers, metal workers, potters

and decorators of pottery and porcelain, furniture makers, wood carvers, stucco workers, etc., both men and women are admitted but the two departments are quite distinct and separate, each having rooms by itself and the courses of study being different in certain respects. The institution is under the immediate direction of the Minister of the Interior and is recognized as a Normal School of Art or Training School for Teachers of Drawing.

The instruction is divided into preliminary training and professional instruction, which means special training in the industries and professions enumerated above.

The preliminary course corresponds pretty nearly to the general course of our own school, except that the old fashioned "flat" copy seemed to be still recognized in a way which I believe it is not in any good American school.

In the department of professional instruction very admirable work is done in wrought metals; in goldsmiths' work, glass painting, china decorating, etc., orders of considerable importance for such work being executed in the school. The course in textile design is however very general, by which I mean that not only are no facilities provided for weaving the fabrics designed by the pupils, but as far as I could learn, no attempt is made to convey, even in theory, any technical knowledge of this important art; the designs produced being made not so much with a view to their use in textile fabrics of any particular kind (for this supposes a certain amount of technical knowledge regarding the production of that class of goods by the designer) as with the idea of making them generally desirable, as ornamental patterns which *might* be adapted to textiles as well as to other forms of surface decoration.

It is in supplying the deficiency which exists here that the distinctive character of the School of the Pennsylvania Museum consists. Many schools besides the one at Munich, exist in America as well as in Europe, and teach drawing and design with a more or less clearly defined industrial purpose, and schools of another class are not wanting, and have to a certain extent been described in this paper, in which a technical knowledge of the textile, and a good many other industries, is taught

with more or less attempt to convey some notions of drawing and design at the same time ; but I feel free to say that in no school whose working I have inspected is the association of the art work and training in this industry so close and the application of one to the other so direct and complete as in our own school.

The course in the Munich School is as follows :

Instrumental Drawing ; Plane and Descriptive Geometry ; Shadows and Perspective ; Architectural Drawing.

Free-hand drawing of ornament ; painting of ornaments from copies ; figure drawing and animal forms from copies, casts and models ; drawing and painting of flowers from copies and from nature ; modelling and carving ; history of art and the styles ; principles of decorative design and anatomy. The last three subjects, as well as the geometry and perspective, being mostly taught by means of lectures, as follows :

Lectures on Geometry—Plane and Descriptive—three hours a week.

Lectures on Perspective and Shadows, two hours a week.

Lectures on Art History and the Styles, two hours a week.

Lectures on Anatomy, two hours a week.

In the school of the Pennsylvania Museum, two hours a week is devoted to the lectures on Geometry, instead of three hours, and those on Anatomy are omitted. The study of this subject being confined to the class in modelling and to actual work done by the students, both in the form of drawing and in the modelling of anatomical figures. In other respects the subjects of the lectures and the time devoted to each is identical in the two schools, and it should be noted in this place that the lectures on Anatomy which are included in the course at the Munich School, are given at the Royal Academy of Fine Arts for the joint benefit of the students of both institutions. An admirable arrangement certainly, and one which, I think, might easily and profitably be made between our own school and the Pennsylvania Academy, where a course of lectures on this subject is given every winter. This co-operation in the matter of lectures is only one of the many ways in which the School of

Industrial Art and the Academy are made to be of assistance to each other. The former being recognized as the preparatory school for pupils who desire to enter the latter. It is well-known that the lack of similar preparation is one of the most discouraging obstacles encountered by the promoters of academical instruction in America, and the arrangement adopted at Munich, by which the industrial school is relied on to furnish this preparatory training, by grounding the student in subjects to which little or no attention can be paid at an academy, would seem to be quite as desirable here as there. Every body knows, for example, that such mathematical study as is necessary to a thorough understanding of perspective, if not positively out of place in an Academy of Fine Arts, is much more likely to be profitably pursued in connection with exercises in industrial drawing where it finds so many other applications in mechanical and architectural work, with the exact and formal methods of calculating and obtaining effects which are indispensable to it. Of any systematic efforts to understand the laws of harmony as applied to color, or to become familiar with the essentials of design and composition, the same is manifestly true, for these subjects are approached most directly, and are understood most readily, if considered in connection with ornament and that all-embracing art—architecture,—however much more subtle their ultimate application may be in painting and sculpture. Again, it is unfortunately necessary to insist in this place, as in every place, upon the fact that the purely technical studies of an academy are of so exacting and absorbing a character as to leave little time, even if they fostered the inclination, which unfortunately they do not, for that general culture which is certainly not less essential to the artist than to other men.

In any good School of Industrial Art, or Architecture, so much attention is necessarily paid to historical and esthetic questions in connection with the development of the styles, that taken in connection with the mathematical work alluded to above, a very fair degree of this same general culture is pretty sure to be attained by the pupils who pass through them, but to which the student of an academy is in some danger of remaining a stranger.

It is quite true that the above considerations may be carried too far, and made to exert an unfavorable, because exaggerated, influence on the education of artists as such. This is, I believe, the case to a certain extent at Nuremburg, where the School of Industrial Art, the oldest art school in Germany, and a most admirably conducted institution in its way, serves also as the Academy of Fine Art, and the result of carrying out the same idea in the English system of schools, for which the National School at South Kensington furnishes the model, have certainly proved rather dismal, as I have tried to show already.

Confined, however, to a preparatory course as they are at Munich, it would seem as if only good could come of this association of the work of an industrial school with the training of the artist, and it seems to me that the organization adopted there is about the ideal arrangement as far as the general training of artist and artisan alike is concerned.

The rules of the institution require that applicants should be at least fifteen years of age ; that they produce school reports, or other papers establishing their moral worth, and that they pass an examination in either free-hand drawing or modelling.

In the classes for professional instruction, however, preference is given to those who are actually apprenticed at a trade, even if such apprenticeship is not positively required as a condition of entering, as seems to be the case sometimes. And special privileges seem to be accorded to adults who have already attained a certain amount of mastery in some industrial pursuit.

As I visited the school during the mid-summer vacation, I had no means of learning to what extent the rules regarding entrance examinations are enforced, but from what I saw of the work of the students, I judge that the standards fixed for entrance are by no means high, even if the rule requiring an examination is not a dead letter, as it certainly is in some other schools, notably that at Crefeld, where no entrance examination is required of the "pay" scholars, notwithstanding the published rule which is supposed to govern admissions. It seems only fair that these things should be known, because we hear so much about the greater thoroughness and higher standards that are insisted upon in European schools, that it is well enough to

be reminded occasionally that these things are not so different over there from what they are at home, and that even such excellent schools as this at Munich are admirable, after all, more for the opportunities they afford, than for the requirements on which they insist, or the rules which they enforce. Outside of the lecture courses, the instruction is individual, and each student has his course or "study plan" prepared for him by the faculty at the time he enters.

The work of the school is roughly divided into two groups of courses; the one, plastic and constructive, arranged to meet the requirements of modellers, carvers, metal workers, potters, furniture makers, etc.; the other, graphic, and arranged for the training of designers for textiles and wall papers; lithographers, engravers, painters, glass and china decorators, etc. Many of the studies are, of course, common to both groups, and, as has been said above, it is regarded as desirable that all pupils should attend in common a general first year's course, before undertaking any of the special or professional work. Full courses in any branch are arranged to cover four years, including the year devoted to the general course.

There is an evening school during the winter months, which appears to be conducted partly, as with us, for the benefit of those—mostly adults—who are unable to attend during the day, and partly as a supplementary department to enable pupils of the day classes to make up deficiencies and recover lost ground.

The National Museum of Industrial Art at Munich impressed me as being by all odds the most admirable and complete institution of this kind which I saw in Europe. Students of the school are privileged, and indeed, expected, to visit and study these collections, but no organic connection seems to exist between the museum and the school. A small working collection of objects most available for purposes of instruction was, however, kept at the school, as is the case with our own institution.

Public exhibitions of the work of the school are not held every year as is the case with us, but a more or less comprehensive display is made about once in two years. Prepara-

tions were making at the time of my visit this year for the school's part in the International Exposition which was held in that city ; unfortunately, however, my visit took place while these preparations were still in progress and before the exposition was arranged, so that the work which I saw at the school was a much less adequate representation of its scope and character, than I could have seen had my visit been made a few weeks later. I saw enough, however, to convince me that the work done in the professional courses is of a very high character, quite high enough to set the standard of what first-class work of a similar kind ought to be, and I found by a tour of the shops of the city, which are, as is well-known, exceptionally attractive, that many of the finest things had been designed by professors of the school and perhaps executed under their direction by the pupils.

The standing of pupils is determined, as in the French schools, mainly by means of competitions in original design on subjects announced from time to time.

Examinations are held at the end of each school year, which those who have attended the lecture courses are expected to pass, and of course a certain amount of importance is attached to the result of these examinations, as well as to regularity of attendance and the amount and quality of the work done in the studios, in determining the attainments of pupils ; but the ages of pupils, their natural abilities and objects in studying art, are so diverse and the rigid enforcement of any "marking" system so manifestly incompatible with the atmosphere of an art school, that the real test of the pupils' progress, in the more advanced courses, anyway, is furnished by the competition, and in the certificates of attainment which are awarded to such pupils as complete in a satisfactory manner courses of at least three year's duration, much importance is justly attached to the honors won at these competitions.

Beside these certificates of attainment two other kinds of certificates are awarded, viz. :

First,--A certificate of attendance, which is evidence, merely, that the student receiving it has been in regular attendance at the school for the time specified, but in which no reference is made to his diligence or attainments.

Second,—A term certificate, which is awarded to such pupils as attend regularly, and complete in a satisfactory manner the exercises required during one full term of half a school year.

It will be seen that the certificate of attainment of the Munich School corresponds to the diploma of our own school, which is awarded only on the completion of a three years' course. For the rest, our practice of awarding a certificate only on the completion of a full year's work, seems to me better than that of granting one for each half year, and I do not feel that the certificate of mere attendance, unaccompanied by any word of commendation or approval, can have any significance at all. Certificates of any kind are only awarded at the Munich School when asked for by the pupil, who has also to pay a small fee in order to obtain them.

The school has an endowment fund, a legacy from King Maximilian II., from which purses are distributed to needy pupils.

These purses, or stipends, are of two kinds, a school stipend of 360 marks (\$90), and a travelling stipend of 720 marks (\$180) a year. The first cannot be drawn for more than two years; the latter for more than one year, and pupils must have been in attendance at the school at least two terms (one year) in order to receive either one of them.

Although this school seems to be attended by a considerable number of young men with a serious and fairly well-defined, professional purpose, it seemed to me that the number of pupils who would have to be classed as amateurs is quite as large as it is in most American schools, possibly (and I believe this is true of European schools generally), considerably larger; for while one hears quite as much about the work of the lady amateur there as here, and while the salesrooms of the Societies of Decorative Art are to a considerable extent occupied by her productions, one hears a great deal more about the work of the gentleman amateur—impecunious nobleman, or what not—who devotes himself with more or less enthusiasm to the production of beautiful things.

It is much the fashion to speak depreciatingly of this class of pupils, and to begrudge the assistance extended to them by free, or practically free instruction. My own feeling is that this is a mistake, and that it is quite time that prevalent notions on this subject were revised. It seems to me that a very fair part of the most effective work that has been done in recent years in industrial and decorative art, has been done by persons whose independence of the professional traditions, and want of association with the methods of the regulation shop has been such as would necessitate their classification with the amateurs. The line between amateur and professional is, however, an extremely delicate one to draw, and the subject would not have been introduced into this discussion at all, if it had not been for the fact that so much importance is often attached to the matter that it seems to be desirable that any comparison of European schools with our own should include some notice of the fact that whatever their status, the proportion of amateurs in European schools is probably greater than it is in those of America.

Allusion has been made to the work done by this institution at Munich as a training school for teachers of drawing. I found that great importance was attached to this function of the school, and its influence made to count for much in determining the character of the instruction given throughout the State.

The course for teachers is a special one and lasts one year, but pupils are not admitted to it who have not completed the second year's course in drawing and painting, which means that in addition to the first year's preparatory training the pupils shall have done one year's work in the course which has been already described as professional.

This is the standard of preparation fixed for those who expect to become teachers of elementary drawing, but candidates for positions in art or industrial schools must have completed the full three years' course before being eligible for the special studies by which he is prepared for this work as a teacher. It seems to me that the development of this Normal School idea in art education and the extension of its benefits by means of judicious legislation and supervision to the entire

school system of the State, is precisely the thing which is most needed in Pennsylvania to-day, and I regard its adoption and working out as not only a most desirable improvement in itself, but as one which would be found to furnish the key to this whole problem of industrial education, which is justly assuming so much importance in educational discussion to-day. For this idea to be carried out, however, it is absolutely indispensable that the Normal School of Art should have official recognition and support, such as has not yet been accorded to any institution of America, with the single exception of the Massachusetts Normal Art School in Boston. The work of this last school is not above criticism it is true; the artistic standards with which its name is associated are not high, and it is only slowly outgrowing some of the worst faults of the English system, which were transplanted in it when it was established. But in spite of all this it deserves a certain amount of respect as representing the first and hitherto, the only earnest effort made by any American State to fix standards and train teachers for its schools. I do not see how it is possible for any school to do this that has not this direct, official support, and by support I mean not only the maintenance by the state of the school itself,—that is comparatively a small matter,—but such recognition of the importance of its work as should exert a powerful influence on the whole educational system of the state; which means that the state must see to it that good teachers are not only trained, but employed, and that the methods which are inculcated at the central and highest institution, are respected in the most elementary. I do not mean by this that any inflexible system of instruction in either the higher or the lower schools is necessary or desirable. Indeed, it seems to me, that although a great deal of energy has been expended in Germany, as well as in England, in the attempt to formulate such systems, the worst faults of the schools of both countries are largely owing to undue respect for, and dependence upon them, and such real excellence as has been achieved in the schools of either country, has been attained in spite of the systems as much as through them.

This has always been the view of the best French teachers and the excellence of the work done in French schools has amply justified their contempt for the narrow and partial culture for which the officially approved system is pretty sure to stand. All the same, there is a right and a wrong in education as in everything else, and unless worthy standards are established in the higher school and respected in the lower, it is idle to expect improvement in either. It is no secret, and nothing can possibly be gained by denying the fact, that prevalent standards regarding the teaching of drawing in the schools of this country are miserably low ; so low that the study as pursued in the vast majority of schools, is little short of a farce. Now it is not enough to establish a school for normal instruction that shall stand for better things. Its graduates must be employed as well ; indeed it is not to be expected that students will devote themselves with much zeal to the work of such a school unless there shall seem to be a reasonable chance of their finding employment when their education is finished. At present no such chance exists, for while there are innumerable schools in which a teacher of drawing is employed, he has usually no status at all proportionate to the importance of his work or the amount of preparation which it requires. He is usually expected to teach other branches as well as his own, and he is fortunate indeed if the least provision is made for his especial needs in the way of models, of lighting and furnishing his room, and of such an arrangement of recitation hours as shall give him periods even respectably long.

It seems to me then that what we have chiefly to learn from the Munich school, is the significance attached to the normal course, and I believe the very best results would follow its proper introduction here.

The teachers who are trained in this school at Munich, having passed the two or three years in preparation in the general work of the school, must, as has already been said, spend one year in training for their work as teachers. The course includes the study of the science of education, of methods of teaching drawing on the black-board, with accompanying demonstrations and practice in the actual management of classes. Pupils com-

pleting the course are examined at the end of each school year, (in July,) and a teacher's certificate is awarded to those who are found properly qualified.

To sum up, it seems to me that the Munich school is superior to our own :

1st. In its admirable building, centrally located and with all the collections of this city of museums within easy walking distance.

2d. In its more varied application of artistic methods to practical industrial work.

3d. In its Normal Department, with its high standards of preparation and its far reaching influence of elementary instruction throughout the State.

On the other hand this school is hampered by influences which we know next to nothing about in America. Every thing done in it seems to bear the impress of the traditions of the town, and the designs produced seem to take on the characteristic of the old things. This has its good side, of course. One doubts if the old countries, most of them at least, can do anything better than maintain the old tradition and perpetuate the old flavor, but there is a charm in freshness too, and those who have not grown up in the shadow of the old must mainly depend on this.

Pupils pay an entrance fee of 2 marks (50 cents) and a fee for tuition of 20 marks (\$5.00) a year.

THE ROYAL SCHOOL OF INDUSTRIAL ART, NUREMBERG.

This is one of the schools in which no distinction is made between fine and industrial art, or rather it is one in which the training of the artisan is identical with that of the artist as far as it goes, and which serves as both a School of Industrial Art and an Academy. The object is, however, distinctly industrial, and its work in the higher academic branches, is evidently regarded as the natural and legitimate extension of the work begun in the classes for industrials, not as something different in kind.

It is the oldest art school in Germany, and perhaps none is more complete in its organization and equipment. Like the Munich school it has a first year's preparatory course in descriptive geometry, perspective, architectural drawing, and the study of ornament from casts and prints. The students practice modelling as well as drawing in this first year.

The advanced or professional work is in three classes or departments, viz.: A school of architecture, a school of sculpture, and a school of painting. The student is expected to spend three years in one of these professional schools. The architectural course deals with the forms of architecture as applied not only to buildings but to furniture and cabinet work. Great stress is laid on thoroughness in the study of the styles and the greatest reverence for traditional types is inculcated.

The school of sculpture embraces classes for modelling from casts, from prints and from nature, carving and work in metal.

The school of painting is largely devoted to decorative work, and the pupils work a great deal from copies; the copies being selected mainly as examples of correctness in the different styles. Only men and boys are admitted to this school. The fees are the same, for Bavarians, as at the Munich school, viz., 20 marks a year for regular students. Foreigners and special students pay a little more. Quite as much as at Munich, possibly still more, the work of this school is dominated by the traditions of Art in Nuremburg. Pupils copy assiduously, not nature but old German ornament, their taste is formed on that and everything they do reflects, and helps to perpetuate its influence. In certain ways and up to a certain point, the charm of this method is undeniable, but its limitations are obvious too, and it is plain enough that it does not furnish the model on which American schools are to be organized.

THE SCHOOL OF INDUSTRIAL ARTS, GENEVA.

With the exception of the Department of Normal Instruction, which is wanting, the organization and work of the Geneva school are substantially the same as at Munich, and these two

were certainly the best schools I saw in Europe. I was fortunate enough to find a pretty complete exhibition of school work on the walls at the time of my visit, so that I had a better opportunity to judge of what was accomplished in it than I had at Munich. I believe, however, that the work of the two schools is about equal in point of merit.

The school is under the direction and administration of the Council of State of the Canton, which delegates one of its members to act as President of the Commission which administers the affairs of the school. All instruction is free.

Two classes of students are admitted, viz. :—Regular scholars who attend regularly and continuously either a general course of art study, or some particular branch such as carving, bronze founding, goldsmiths' work, etc., and special students, apprentices, workmen and others, who arrange to receive instruction at stated hours.

As in the Munich school the pupils produce work which has a commercial value, and objects made in the school are kept for sale. A part of the money received being paid to the student executing the work.

The courses of study embrace modelling and carving in plaster, stone and wood ; *repoussé* work in metals ; painting in water color, in enamel, and on China ; casting and chasing of bronze and the precious metals ; work in wrought iron and engraving, besides the regular work of drawing schools in general, such as drawing from the cast, from plants and flowers, and from the living model. The school occupies a very fine and spacious building erected a few years ago at a cost of about \$160,000, and is furnished with very admirable and adequate appliances, not only for study, but for the execution of art work on a considerable scale. A magnificent chimney piece in Renaissance sculpture some twelve feet high, intended for the Paris exhibition of 1889, was in process of execution at the time of my visit. It was, of course, the work of one of the Professors ; but it is easy to see that the influence on the pupils of having work of so much importance produced in the school, must be very great in giving dignity and seriousness to their own efforts. The pupils are of both sexes, and I heard of no distinction of,

or separation between, them in the organization of the classes ; but as no mention is made of the matter in the circular of the school, I cannot speak positively regarding it. I was told, however, that a great many ladies attended the school, especially the class in Ceramics, and a large chimney piece in glazed tiles which was produced by one of them in one of the competitions held just prior to my visit was evidence of the serious character of their work.

The discipline of the school seems to be very strict, the time of each pupil's coming in and going out being carefully noted, and the utmost regularity of attendance during the hours covered by his course being required of each pupil. All "regular" pupils are also required to attend the evening schools of the city.

Encouragement and recognition of ability and application are made in the form of prizes, which are awarded by means of competitions or *concours* held at different times, and on such subjects as are announced from time to time.

The work in drawing from the cast, from the plant, and from life which were on exhibition at the time of my visit, were fairly good, and the methods of study in vogue were sensible and practical. There seemed to be almost none of that mechanical and painstaking elaboration of the drawings which is so conspicuous a fault in English, and to a certain extent, in German schools ; on the contrary, the studies all seemed to have been made with reference to their profitableness as studies, and no importance at all seemed to be attached to them as results ; this is at it should be, of course, but it is unfortunately in extremely rare instances that the principle is observed. The color studies were mostly in *gouache* or body color, bold and broad in treatment, indicating that they were made with directness and rapidity, and much the same is to be said of the drawings in black and white and of the modelling. Pupils are admitted at the age of fourteen, and this "regular" work was rather less advanced than the corresponding branches in our own school ; but as far as it went and judged fairly with reference to its purpose and place in an industrial school, I have never seen any better work anywhere. It will be seen that no provision is made

for instruction in textile design, either practical or theoretical, of either the ordinary or the more ornamental classes, but as far as concerns the branches in which such actual application of art to industry is made, the school seems to be about all that such an institution ought to be.

What is the lesson that so much of an inquiry as that which we have pursued this evening, ought to teach? To me it is this: that the crying need of industrial education in Pennsylvania to-day is a school of such commanding importance, and such adequate support, as the best of those I have described are in their own States in Europe; one which shall assume the leadership of, and give direction to all this energy which fairly seethes and bubbles in discussion.

It seems to me that the movement in America needs nothing so much as a few central schools, which shall in their completeness embody the ideas which the movement represents; in which not only shall right impulses be given, but substantial results attained; not only such methods of instruction be disseminated, but work produced as shall set the standard of what excellence is.

We have made good beginnings enough, and plenty of promise has been given. Let us carry something to completion, and supplement promise with performance. And let us by profiting, in all modesty, by the experience that can be gleaned from others, build up at home the model institution of all. Nothing less than this will honor, as it deserves, the State we serve.

THE FOLLOWING IS A LIST OF THE PAPERS READ
BEFORE THE ASSOCIATION.

Those Marked * out of Print. † Not Printed.

1871. *Compulsory Education.* By Lorin Blodget. *
Arbitration as a Remedy for Strikes. By Eckley B. Cox. *
The Revised Statutes of Pennsylvania. By R. C. McMurtrie. *
Local Taxation. By Thomas Cochran. *
Infant Mortality. By Dr. J. S. Parry.
1872. *Statute Law and Common Law, and the Proposed Revision in Pennsylvania.* By E. Spencer Miller. †
Apprenticeship. By James S. Whitney.
The Proposed Amendments to the Constitution of Pennsylvania. By Francis Jordan.
Vaccination. By Dr. J. S. Parry. *
The Census. By Lorin Blodget. *
1873. *The Tax System of Pennsylvania.* By Cyrus Elder. *
The Work of the Constitutional Convention. By A. Sydney Biddle.
What shall Philadelphia do with its Paupers? By Dr. Isaac Ray.
Proportional Representation. By S. Dana Horton. *
Statistics Relating to the Births, Deaths, Marriages, etc., in Philadelphia. By John Stockton-Hough, M. D.
On the Value of Real Scientific Research. By Dr. Ruschenberger.
On the Relative Influence of City and Country Life, on Morality, Health, Fecundity, Longevity and Mortality. By John Stockton-Hough, M. D.
1874. *The Public School System of Philadelphia.* By James S. Whitney.
The Utility of Government Geological Surveys. Professor J. P. Lesley.
The Law of Partnership. By J. G. Rosengarten. *
Methods of Valuation of Real Estate for Taxation. By Thomas Cochran.
The Merits of Cremation. By Persifor Frazer, Jr.
Outlines of Penology. By Joseph R. Chandler.
1875. *Brain Disease and Modern Living.* By Dr. Isaac Ray. †
Hygiene of the Eye, Considered with Reference to the Children in our Schools. By Dr. F. D. Castle.
The Relative Morals of City and Country. By William S. Pierce.
Silk Culture and Home Industry. By Dr. Samuel Chamberlaine.
Mind Reading, etc. By Persifor Frazer, Jr.
Legal Status of Married Women in Pennsylvania. By N. D. Miller.
The Revised Status of the United States. By Lorin Blodget.
1876. *Training Nurses for the Sick.* By John H. Packard, M. D.
The Advantages of the Co-operative Feature of Building Associations. By Edmund Wrigley.
The Operations of our Building Associations. By Joseph I. Doran.
Wisdom in Charity. By Rev. Charles G. Ames. *
1877. *Free Coinage and a Self-Adjusting Ratio.* By Thomas Balch.
Building Systems for Great Cities. By Lorin Blodget.
Metric System. By Persifor Frazer, Jr.
1878. *Cause and Cure of Hard Times.* By R. J. Wright.
House-Drainage and Sewerage. By George E. Waring, Jr.
A Plea for a State Board of Health. By Benjamin Lee, M. D.
The Germ Theory of Disease, and its Present Bearing upon Public and Personal Hygiene. By Joseph G. Richardson, M. D.
1879. *Delusive Methods of Municipal Financiering.* By William F. Ford. †
Technical Education. By A. C. Rembaugh, M. D.
The English Methods of Legislation Compared with the American. By S. Sterne.

1879. *Thoughts on the Labor Question.* By Rev. D. O. Kellogg.
On the Isolation of Persons in Hospitals for the Insane. By Dr. Isaac Ray.
Notes on Reform Schools. By J. G. Rosengarten. *
1880. *Philadelphia Charity Organization.* By Rev. Wm. H. Hodge.
Public Schools in their Relations to the Community. By James S. Whitney.
Industrial and Decorative Art in Public Schools. By Charles G. Leland.
Penal and Reformatory Institutions. By J. G. Rosengarten.
1881. *Nominations for Public Office.* By Mayer Sulzberger.
Modelling for the Study of Human Character. By Edward A. Spring. †
1882. *Municipal Government.* By John C. Bullitt.
Result of Art Education in Schools. By Chas. G. Leland.
Apprenticeship at it Was and Is. By Addison B. Burk.
1883. *The American Aristocracy.* By Lincoln L. Eyre.
A Plea for a New City Hospital. By Thomas W. Barlow.
Some Practical Aims on School Hygiene. By Dr. Lincoln. †
The Pending School Problems. By Professor M. B. Snyder.
Municipal Government. By Wm. Righter Fisher.
Social Condition of the Industrial Classes. By Lorin Blodget.
1884. *Progress of Industrial Education.* By Phillip C. Garrett.
A Plea for Better Distribution. By Charles M. DuPuy.
Formation of Public Libraries in Philadelphia. By Lloyd P. Smith. †
Best Means of Regaining Health. By Dr. Walters. †
Milk Supplies of our Large Cities, etc., etc. By J. Cheston Morris, M. D.
1885. *Alcoholism.* By A. C. Rembaugh, M. D.
Sanitary Reforms in Large Cities. By Dr. Leffmann. †
Sanitary Influence of Forest Growth. Dr. J. M. Anders.
Outline of a Proposed School of Political and Social Science. By Edmund J. James, Ph. D.
1886. *The Organization of Local Boards of Health in Pennsylvania.* By Benj. Lee, A. M., M. D., Ph. D.
Manual Training a Valuable Feature in General Education. By C. M. Woodward, Ph. D.
The Gas Question in Philadelphia. By Edmund J. James, Ph. D.
Trade Dollars: The President's Power, etc., etc. By Dr. James C. Hallock.
The Balance of Power between Industrial and Intellectual Work. By Miss M. M. Cohen.
Wife Beating as a Crime, and its Relation to Taxation. By Hon. Robert Adams, Jr.
Defeat of Party Despotism. By Rev. Dr. Leonard W. Bacon. †
Land and Individualism. By Kemper Bockock. †
1887. *Chairs of Pedagogics in our Universities.* By Edmund J. James, Ph. D.
1888. *Journalists: Born or Made.* By Eugene M. Camp.
1889. *Industrial Education in Europe.* By L. W. Miller.

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